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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,659	04/04/2002	Atsunobu Sakamoto	0112895-005	6654
40337	7590	01/04/2005		
NANCY A. PAPPAS 15210 AMBERLY DRIVE #1826 TAMPA, FL 33647			EXAMINER JEFFERY, JOHN A	
			ART UNIT 3742	PAPER NUMBER 14
DATE MAILED: 01/04/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/980,659

Applicant(s)

SAKAMOTO ET AL.

Examiner

John A. Jeffery

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/23/04 & Petition decision of 10/19/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Revised Amendment Practice

Applicant is reminded that amendments must be submitted in compliance with 37 CFR 1.121 in accordance with the revised amendment practice for all amendments filed on or after July 30, 2003.

The examiner notes two sets of claims in the instant application: (1) claims 1-24 listed on Pages 18-22 of the amendment filed 4/23/04, and (2) claims 1-12 listed following the abstract in the marked-up copy of the amended specification. The examiner presumes that applicant intended claim 1-24 to be examined.

To clarify the record, applicant must (1) confirm that claims 1-24 are pending, and (2) cancel all other spurious claims in the disclosure. As noted above, all amendments must comply with the revised amendment practice.

Drawing Objections

The drawings are objected to because of the following informalities:

Fig. 1-3: The two separate subfigures of each figure (i.e., electric heater and seal line) must be bounded by a parenthesis to denote a unitary figure.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the broadened electrode portions being non-uniform in surface area with respect to each other as

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claimed in claims 2 and 7 must be shown or the feature cancelled from the claims. The drawings currently only show electrode areas with a uniform surface area -- not a non-uniform surface area. Applicant is reminded to amend the specification accordingly in conjunction with the addition of any new figures. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 16-24 are objected to because of the following informalities:

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Claim 16: In line 1, "1" must be changed to "7." Although the claim depends from claim 1, the examiner presumes that such dependency is a typographical error and applicant intended the claim to depend from claim 7 in view of (1) the preamble's consistency with claim 7 ("[t]he heater wire"), and (2) claim 6 that is commensurate in scope with claim 16.

Claim 17: In line 4, "along" must be inserted after "arranged."

Appropriate correction is required.

Duplicate Claim

Applicant is advised that should claim 11 be found allowable, claim 14 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else so close in content that they cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim 14 recites the identical subject matter of claim 7 except for a preferred high resistance material ("such as iron chromium or equivalents thereof"). However, due to the phrase "such as," the materials following the phrase are not necessarily part of the claim. Consequently, claims 11 and 14 cover essentially identical subject matter.

Joint Inventors -- Common Ownership Presumed

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligations under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103.

Claim Rejections - 35 U.S.C. § 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

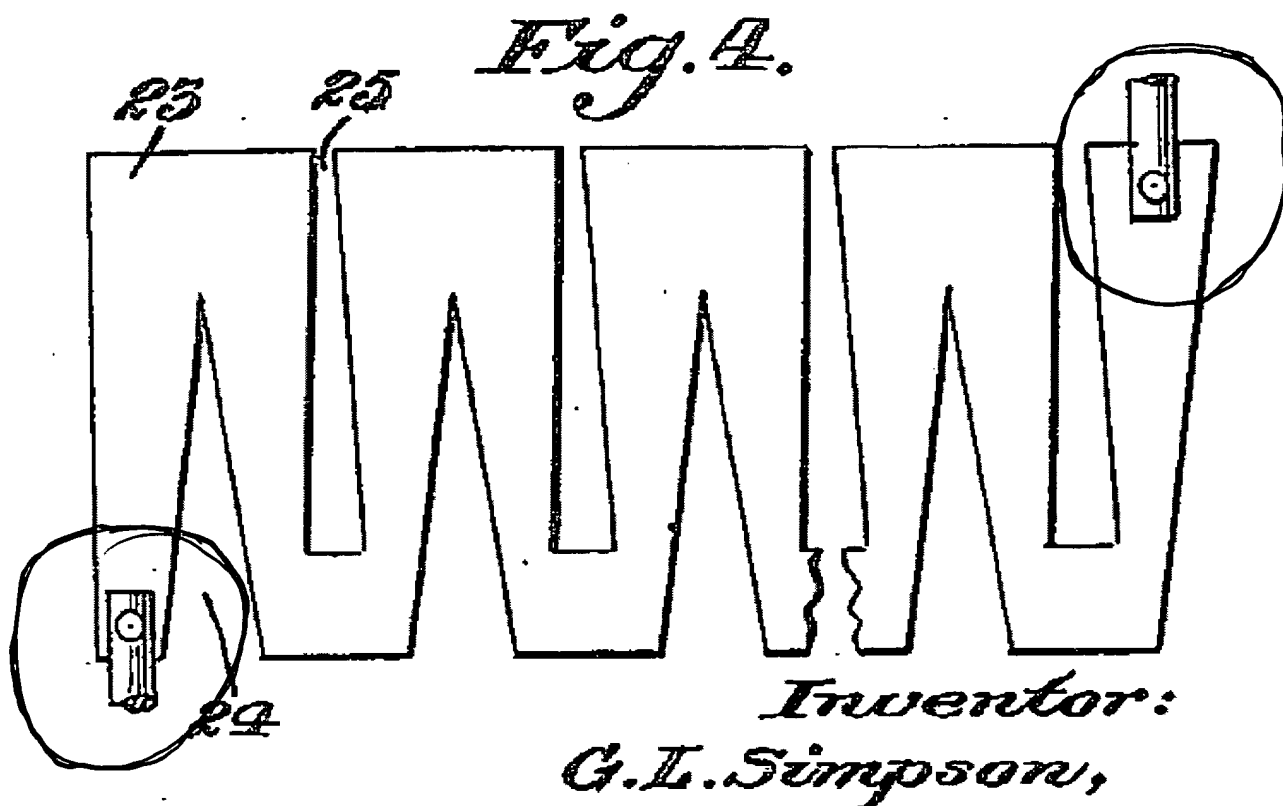
Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1, 3, 4, 17-19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US 5,415,724) in view of Bohener (US 2,464,633). Perrett (US 5,415,724) discloses an impulse heat sealer (col. 2, lines 7-10) with electric heater wire comprising a thin plate with widened electrode portions 17 and narrower heating portion 18. See Fig. 1 and col. 4, lines 61-65.

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The claims differ from the previously cited prior art in calling for the heater to comprise a series of zigzags and gaps. But zigzagging an electric heater in a heated platen is well known in the art. Bohener (US 2,464,633), for example, discloses an electric heater 16 that is zigzagged along its length. See Fig. 2. As is well known in the art, such a serpentine heater pattern maximizes heat output along the length of the platen by increasing the overall distance of the resistor as compared to the platen. In view of Bohener (US 2,464,633), it would have been obvious to one of ordinary skill in the art to provide a serpentine pattern in lieu of the straight heater pattern of the previously described apparatus to maximize heat output along the length of the platen by increasing the overall distance of the resistor as compared to the platen. Regarding claim 4, the uniform spacing of the zigzags in Bohener (US 2,464,633) would inherently achieve a unitary seal due to the uniform heat imparted to the workpiece.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US 5,415,724) in view of Bohener (US 2,464,633) and further in view of Simpson (US 1,975,410). The claim differs from the previously cited prior art in calling for asymmetrical electrode portions. But asymmetrical electrode portions in electric heaters is well known in the art. Simpson (US 1,975,410), for example, discloses providing electrode portions for a serpentine electric heater 25 with unequally sized electrode portions. Compare the left electrode portion with the right electrode portion in Fig. 4 of Simpson (US 1,975,410), reproduced below for clarity:



Such an arrangement produces a non-uniform heating profile along the heater thus compensating for temperature non-uniformities during operation. See Page 2, lines 26-48. In view of Simpson (US 1,975,410), it would have been obvious to one of ordinary skill in the art to provide unequally sized electrode portions in the heater of the previously described apparatus to produce a non-uniform heating profile along the heater thus compensating for temperature non-uniformities during operation.

Claims 7, 11, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US 5,415,724) in view Simpson (US 1,975,410). The claims differ from the

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previously cited prior art in calling for asymmetrical electrode portions. But asymmetrical electrode portions in electric heaters is well known in the art. Simpson (US 1,975,410), for example, discloses providing electrode portions for a serpentine electric heater 25 with unequally sized electrode portions. Compare the left electrode portion with the right electrode portion in Fig. 4 of Simpson (US 1,975,410), reproduced above for clarity. Such an arrangement produces a non-uniform heating profile along the heater thus compensating for temperature non-uniformities during operation. See Page 2, lines 26-48. In view of Simpson (US 1,975,410), it would have been obvious to one of ordinary skill in the art to provide unequally sized electrode portions in the heater of the previously described apparatus to produce a non-uniform heating profile along the heater thus compensating for temperature non-uniformities during operation.

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US 5,415,724) in view of Simpson (US 1,975,410) and further in view of Bohener (US 2,464,633). The claims differ from the previously cited prior art in calling for the heater to comprise a series of zigzags and gaps. But zigzagging an electric heater in a heated platen is well known in the art. Bohener (US 2,464,633), for example, discloses an electric heater 16 that is zigzagged along its length. See Fig. 2. As is well known in the art, such a serpentine heater pattern maximizes heat output along the length of the platen by increasing the overall distance of the resistor as compared to the platen. In view of Bohener (US 2,464,633), it would have been obvious to one of ordinary skill in the art to provide a serpentine pattern in lieu of the

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straight heater pattern of the previously described apparatus to maximize heat output along the length of the platen by increasing the overall distance of the resistor as compared to the platen. The uniform spacing of the zigzags in Bohener (US 2,464,633) would inherently achieve a unitary seal due to the uniform heat imparted to the workpiece.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US 5,415,724) in view of Simpson (US 1,975,410) in view of Bergersen et al (US4501956). The claim differs from the previously cited prior art in calling for thinning the electric heater by a rolling process. Thinning electric heating elements by rolling processes is conventional and well known in the art as evidenced by Bergersen et al (US4501956) noting col. 3, lines 24-25. The use of rollers to thin elements is advantageous in that thinning of the heater sheets may be achieved in a continuous fashion, such as on a conveyor. In view of Bergersen et al (US4501956), it would have been obvious to one of ordinary skill in the art to use a rolling process to thin the electric heater of the previously described apparatus so that the heater sheets were thinned in a continuous fashion, such as on a conveyor.

Claims 5, 6, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US 5,415,724) in view of Bohener (US 2,464,633) and further in view of Weisz (US 4,108,713). The claims differ from the Perrett (US5415724) in calling for the sealer to be used as a book binder and laminator.

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However, using heat sealing electric heaters in such applications is well known in the art as evidenced by Weisz (US 4,108,713) noting the first sentence of the abstract. In view of Weisz (US 4,108,713), it would have been obvious to one of ordinary skill in the art to use the electric heater sealer in laminating and bookbinding applications so that layers of thermoplastics could be adhesively bonded together as well as binding books using an efficient electric heat sealing apparatus.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US 5,415,724) in view of Simpson (US 1,975,410) and further in view of Hurko et al (US 4,286,377). The claim differs from the previously cited prior art in calling for processing the heater wire by photoetching. Forming a zigzag electric heater foil via a photoetching process is conventional and well known in the art as evidenced by Hurko et al (US4286377) noting the last line of the abstract and col. 3, lines 35-40. Using such an etching process, the heater pattern can be precisely fabricated using automated techniques. In view of Hurko et al (US4286377), it would have been obvious to one of ordinary skill in the art to use a photoetching process to fabricate the heater pattern of the previously described apparatus so that the heater pattern can be precisely fabricated using automated techniques.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US 5,415,724) in view of Simpson (US 1,975,410) and further in view of Weisz (US 4,108,713). The claims differ from the Perrett (US5415724) in calling for the

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sealer to be used as a book binder and laminator. However, using heat sealing electric heaters in such applications is well known in the art as evidenced by Weisz (US 4,108,713) noting the first sentence of the abstract. In view of Weisz (US 4,108,713), it would have been obvious to one of ordinary skill in the art to use the electric heater sealer in laminating and bookbinding applications so that layers of thermoplastics could be adhesively bonded together as well as binding books using an efficient electric heat sealing apparatus.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US 5,415,724) in view of Bohener (US 2,464,633) and further in view of Solow (US 4,306,217). The claim differs from the previously cited prior art in calling for strengthening the metal via a tempering means. Tempering electric heater foils by annealing and the like is conventional and well known in the art as evidenced by Solow (US 4,306,217) noting col. 5, lines 19-34 where the electric heater foil is annealed at 1000 degrees F during manufacture. As is well known in the art, annealing metals inherently imparts strength to metals in view of the changes in grain structure of the metal caused by the annealing process. In view of Solow (US 4,306,217), it would have been obvious to one of ordinary skill in the art to strengthen the electric heater by a tempering process, such as annealing, in the previously described apparatus so that the electric heater was stronger and more durable at elevated temperatures.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perrett (US 5,415,724) in view of Bohener (US 2,464,633) and further in view of). The claim differs from the previously cited prior art in calling for processing the heater wire by photoetching. Forming a zigzag electric heater foil via a photoetching process is conventional and well known in the art as evidenced by Hurko et al (US4286377) noting the last line of the abstract and col. 3, lines 35-40. Using such an etching process, the heater pattern can be precisely fabricated using automated techniques. In view of Hurko et al (US4286377), it would have been obvious to one of ordinary skill in the art to use a photoetching process to fabricate the heater pattern of the previously described apparatus so that the heater pattern can be precisely fabricated using automated techniques.

Other Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant should (1) separately consider the art, and (2) consider the art together with the previously cited prior art for potential applicability under 35 U.S.C. §§ 102 or 103 when responding to this action. US 531 discloses a self-supporting electric heater disposed in a zigzag fashion in Fig. 6 and 7. US 621 (Fig. 3), US 140, US 051, DE 806 (Fig. 1) disclose electric heaters relevant to the instant invention.

Response to Arguments

Applicant's arguments have been considered but are deemed to be moot in view of the new grounds of rejection.

Final Rejection

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

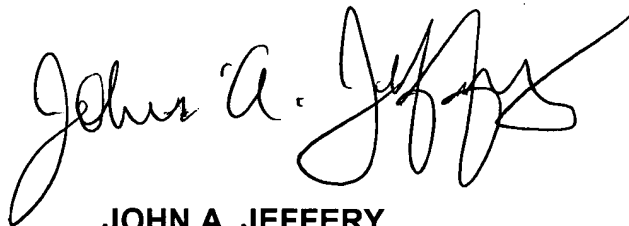
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Jeffery whose telephone number is (571) 272-

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4781. The examiner can normally be reached on Monday - Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans, can be reached on (571) 272-4777. All faxes should be sent to the centralized fax number at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "John A. Jeffery", with a stylized flourish at the end.

**JOHN A. JEFFERY
PRIMARY EXAMINER**

12/13/04